

# Construction Based Test of Creative Thinking

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## Introduction

This construction based creativity test is modeled after the Torrance Test of Creative Thinking developed by E. Paul Torrance, former U of M professor. The TTCT relies on verbal and figural responses to accurately assess a participant's potential for creative thought. The construction based test developed for this project takes a hands on approach to the TTCT format.

It was predicted that Howard Gardner's theory of multiple intelligences would apply to the assessment of an individual's creative potential.

The theory suggests multiple mediums for creative expression are necessary to ensure accurate test results.

The TCTT evaluates creativity based on of visual-spatial intelligence and verbal-linguistic intelligence.

The experimental test of creativity allows participants to rely on body-kinesthetic intelligence while using plastic construction bricks to build a creation within the parameters of a prompt.

## Methods

Participants were given the following prompt:

Furniture [fur-ni-cher] *n* The moveable articles, such as tables, chairs, desks or cabinets, required for use or ornament in a house, office or the like.

Using the kit in front of you, create a piece(s) of furniture.

- You do not have to use everything
- There is no time limit
- Be creative! ☺

In total, 29 participants were administered the construction test and a Torrance Test of Creative Thinking.

Creations were graded in multiple categories. The categories are derived from the grading guidelines of the TTCT, and were adjusted to be applicable in assessing a creation constructed out of plastic bricks. Each category has been determined by Torrance to serve as an indicator of creativity. The categories along with a brief description are listed below:

### Norm-Referenced Measures

#### Originality

Originality is the ability to generate unique ideas. A list was compiled of the statistically most common responses. If a creation does not appear on the list, it is given 1 pt.

#### Elaboration

Elaboration is the process of enhancing an idea with details. A creation receives 1 pt. each time elaboration is apparent. Examples of possible forms of elaboration include, the use of adjectives to describe the creation, or intentional decorative features.

#### Criterion-Referenced Creativity Indicators

#### Movement and Sound

Based on theories of projective psychology, movement and sound are considered to be indicators of creativity. If the creation displays or is described to incorporate movement or sound, 1pt. Is awarded.

#### Richness and Colorfulness of Imagery

1 pt. is given if rich details that appeal to one of the five senses are displayed or described.

#### Abstractness of Titles

1pt is given if title is abstract as defined by the TTCT

#### Context

Giving the construction context is considered to be an indicator of creativity. Creative ideas often require context in order to take hold. If an environment is imagined for the creation to exist in 1 pt. is given.

#### Internal Visual Perspective

Internal visual perspective occurs when attention is given to the internal and dynamic workings of the creation. 1 pt. is given if this is displayed.

#### Fantasy

1 pt. is given if creation draws from existing elements of fantasy or creates new ones.

#### Humor

1 pt. is awarded if the creation includes elements that are intended to be humorous.



Creativity Test Kit

Consists of: 28 bricks, 1 storage box, 1 rubber band.

The total construction based test score was calculated using the procedure described below.

### Norm-Referenced Measures

Originality					
Raw score	0				1
Scaled score	11				19
Elaboration					
Raw score	0	1	2-3	4	5+
Scaled score	11	12	15	18	19
					Scaled Total x 2 = Scaled score

Scaled score ranges give weight to originality and elaboration that is comparable to the TTCT.

### Criterion-Referenced Creativity indicators

The sum of the points is multiplied by  $\frac{20}{7}$ .

This multiplier gives the construction test score a comparable value to the TTCT where there 20 criterion-referenced creativity indicators opposed to the 7 that are factored into the construction test score.

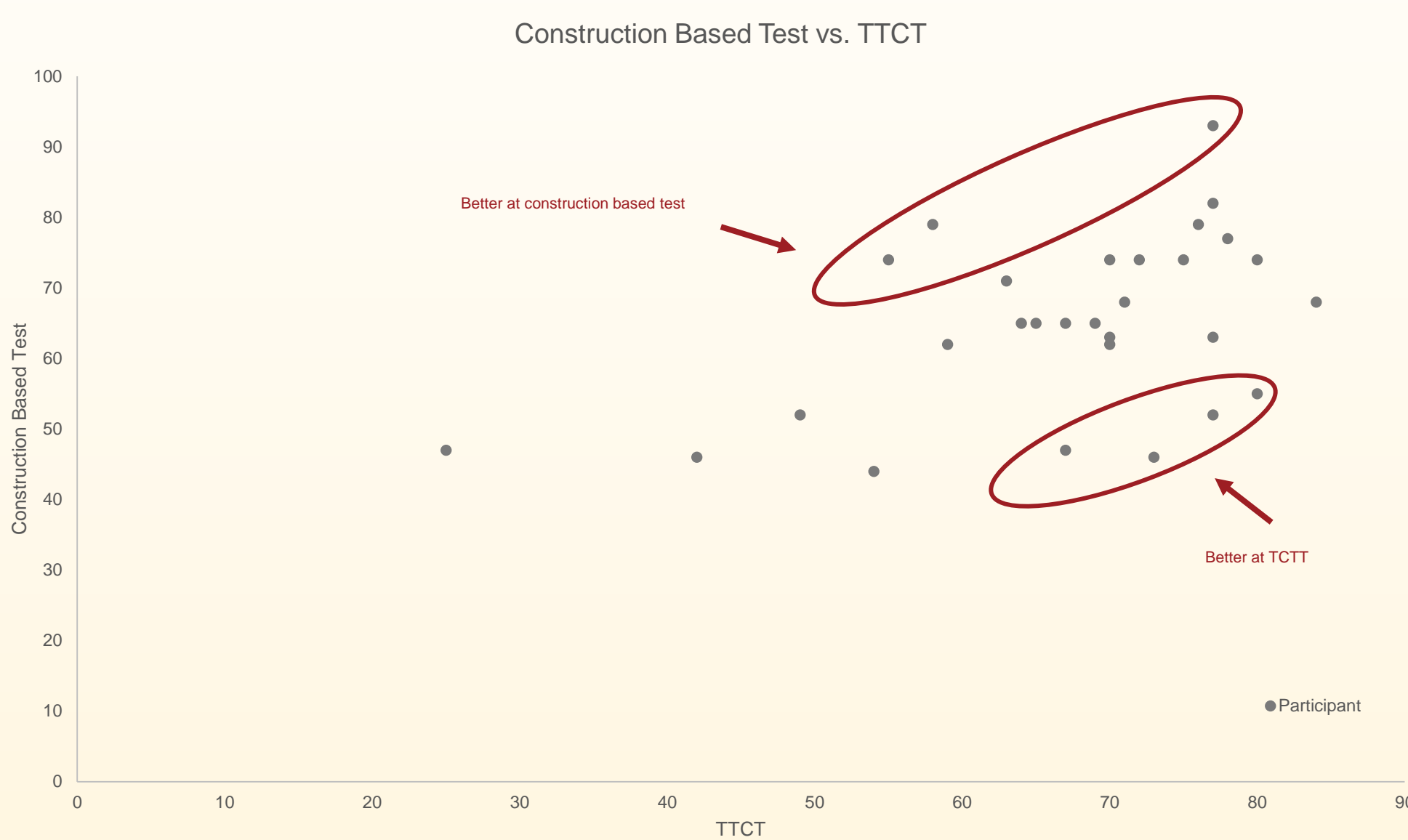
**Total = Scaled Score + Indicator Score**

## Results

The coefficient of correlation between scores on the TTCT and the construction based test was **0.48**. The correlation between scores of the two tests is moderate.

To the right is a graph displaying test scores. The TTCT is represented on the x-axis and the construction based test score lies along the y-axis.

Circled data points represent participants whose scores varied greatly between the two tests.



## Conclusion

The correlation between each of the tests is moderate. The correlation of 0.48 suggests that the construction test is an accurate indicator of creativity. However, it is likely the correlation is not strong due to the varying degrees of success participants have with the verbal, figural, and construction responses. This supports the prediction that the theory of multiple intelligences translate into different levels of creative achievement depending on the form of expression. The magnitude of the effect this has on results is unclear. Therefore, further investigation into creativity scores of the two tests as a factor of the dominant form of intelligence of the participant should be conducted. The resulting test scores would provide additional insight regarding the accuracy of the construction test and the effect comfort with the medium has on creative expression.

## References

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